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FIELD NOTES ON THE SERIEMA (*CHUNGA BURMEISTERI*).

BY HOWARTH S. BOYLE.

ON October 21, 1914, Mr. Leo E. Miller and the writer left New York for South America on an extended collecting and exploring trip of two years. Collections were made in various parts of Colombia, Bolivia and the Argentine. It was in the sandy wastes of the latter country that the Seriema was found and its habits observed.

Lavalle, 1800 feet, our collecting station, was about seven hours by train south of Tucuman, the capital of the Argentine state of that name.

The soil, for the most part, is very dry and affords little opportunity for cultivation. Thorn bushes and stunted trees form the main growth which, in some places, is really very dense and all but impregnable. Water is scarce, though there are several small, artificial ponds used mostly by cattle. The railroad furnishes water to the few inhabitants once or twice daily.

Desert-like as it seemed, with its cactus, heat and dust, Lavalle proved to be an exceedingly interesting locality for collecting. Mammals were very abundant. Viscachas were so numerous as to be a pest; their huge and scattered runways were to be seen on all sides; living with them, in apparent harmony, were rabbits, foxes, skunks, cavies, owls, and boa constrictors.

It was in this type of country that we found this queer, long-legged runner, *Chunga burmeisteri*, or chuña, as the natives call it. Being unique, not only in its classification, but in appearance as well, this species as it skipped along a dusty trail only to disappear into the dense, brush patches at the slightest sign of danger, gave us at once not only an admiration for its beauty and grace, but a desire to know more concerning its secretive habits. The call-notes were a series of cries and yelps which were given in chorus; that is, one individual would start his queer, turkey-like yelps, while other birds joined in until four or five would be chanting at the same time. The volume of sound would then diminish and

the song end abruptly. We rarely saw more than one individual at a time. Apparently they move continuously, running away at the slightest sound; yet the word run can hardly be used in this connection, as there is no visible motion of the body, just a graceful glide, at once both swift and deceiving.

During the early evening is the best time to view them as they seem to frequent the larger and more open of the numerous cow-paths at this hour. They show great fondness for horses and cattle; benefiting, no doubt, by the insects which they disturb. On several occasions we had ample opportunity to observe solitary specimens which were kept by the natives as pets. It was most interesting to watch them feed. On giving one individual the body of a large bird, it attempted to swallow the meat whole, but without success; it then proceeded to tear the flesh by placing it under foot and using its bill, but even this failed; finally, taking the body firmly in its beak the bird ran a few paces, then reared to full height and brought the meat to the earth with considerable force; this was repeated until the entire amount was consumed. During the whole performance the head and neck feathers were raised and lowered in apparent anger.

The same individual was seen to perform what was either a dance or a fight. Nervously jerking its tail and uttering a short *cluck*, the bird ran forward with lowered head at a small tree. Suddenly stopping, it struck at the tree with both feet; this was repeated a number of times in rapid succession, and with great excitement. Then just as abruptly as it had started, the bird stopped, raced around the yard and returned once more to renew its queer antics.

In preparing the skins of our specimens, several interesting observations were made. There is, of course, no visible crop; the gizzard was exceedingly large and usually contained a varied assortment of food which, perhaps owing to the lack of water, was rather dry, and easily examined.

The gizzards of four specimens showed little or no variation; hard beetles, both large and small, together with large locusts, formed the greater portion of insect diet; green leaves and grasses with a small quantity of hard seeds made up the vegetable food; while in one specimen an entire rat, or young cavia, was found.

It might be interesting to note that we observed but few locusts in the field, perhaps proving that the Chuñas made special effort to secure them. I imagine that the examination of a large series of gizzard contents would reveal a great variety of food stuff.

The tame birds greedily ate the bodies of birds and rats, while one individual consumed small tacks and broken china without embarrassment. Of special interest perhaps was the finding of the double ovary in two of the specimens, while another female had but the usual single ovary.

It is difficult to estimate just how numerous these birds are. There is one section of the "Gran Chaco" of northeastern Argentina that is called "Campo de las Chuñas" where the natives go each year to secure the eggs of this bird for eating purposes. We believe these to be the same species as *Chunga burmeisteri*; the red-legged variety is said to live in the uplands and on the mountain slopes.

The flesh of this bird is very much esteemed by the natives, who, after carefully boiling the meat, make it into a stew and serve with potatoes, rice, raisins and a quantity of spice which forms quite a palatable dish and, after the usual diet of very young goat or kid, is a most welcome change.

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## THIRTY-TWO YEARS OF BIRD MIGRATION AT RALEIGH, NORTH CAROLINA.

BY C. S. BRIMLEY.

IN the spring of 1885, I first began to fill out migration schedules for the U. S. Biological Survey, and have kept up the habit every succeeding spring since, except in 1902, in which year I made observations, but lost my records, and the little data I have for that spring comes from the dates of a few skins which I collected then. The share others have had in the work is indicated at the end of Table I.

Not only have "arrivals" in spring been noted, but the "lasts"